Appendix I-B

Media Files, Plots, and Final Data File

Appendix I-B
Media Files, Plots, and Final Data File

Media Files

The concentration input files resulting from the data selection process are called the media files. The media files were derived from the Microsoft Access database of raw files (see Appendix A in the final publication of Volume II of the draft data report). The media files are provided on diskette in this report as comma separated files that can be opened and read by Microsoft Excel 5.0

Each medium is provided in a separate file. The media are groundwater (GW), sediment (SD), seeps (SP), surface water (SW), and external radiation (ER). Each media file contains a record for each contaminant in each segment. The records are sorted by contaminant first, then segment. For each medium, a file is constructed that contains the following information:

Media Files

Media	Medium name
Segment_No	Segment number
Contaminant	Contaminant name
Units	Units of measurement
Max_Value	Maximum concentration
Max_Qualifier	Qualifier associated with the maximum concentration
Max_Conc_Flag	Concentration flag associated with the maximum concentration, used instead of the qualifier
Max_Samp_Num	Identifying number for the sample with the maximum concentration
Max_Samp_Date	Date of the sample with the maximum concentration
Max_Samp_Owner	Organization that has responsibility for the sample with the maximum concentration
Max_NScoord	North-south coordinate for the sample with the maximum concentration
Max_EWcoord	East-west coordinate for the sample with the maximum concentration
GM	Geometric mean
GSD	Geometric standard deviation
Nobs/Num_Obs	Number of records for that contaminant/medium combination
Nfit/Num_Obs_fit	Number of null or negative values that were estimated if the fitting process was used to calculate the geometric mean and geometric standard deviation (see “Compute Stochastic Parameters” in Section 3.4.3.2 for explanation of fitting process)
-999	Missing/not sampled
#####	Widen column so number can appear
GW	Groundwater

NA	Not available
ND	Not detected
NS	Not sampled
SD	Sediment
SP	Seeps
SW	Surface water
TLD	External radiation

If there were no data for a contaminant and segment combination, there is an "NA" in the media file for the pertinent record. This is the case for the maximum and its associated information and for the geometric mean and geometric standard deviation. If data are marked as undetected (qualifier of "u") in segments with no detected values for the particular contaminant in question, a geometric mean and geometric standard deviation were calculated on the detection limits reported (see Section 3.4.2), but the maximum value and its associated information are reported as not available (NA). The media file names are:

med-gw.csv	groundwater data	med-sw.csv	surfacewater data
med-sd.csv	sediment data	med-tld.csv	external radiation data
med-sp.csv	seep data		

Plots of the Maximum Values and Geometric Means

The plots in this appendix depict the maximum values and geometric means of the contaminants for which data, extrapolated data, or surrogate data are available. Extrapolation is the filling of data gaps using data from the same medium but from a different location. Surrogation is the filling of data gaps using data from the same location but from a different medium. The following rules were applied to fill some of the data gaps:

- Groundwater: No substitutions
- Sediment: No substitutions
- Seep Water: Use groundwater data as a surrogate where available
- Surface Water: If no measured data are available for Segment 1, extrapolate from Segment 2 if available. In Segments 2-27, extrapolate from the nearest upstream segment with measured data

Because Segment 1 is upstream of the operating areas, the values for Segment 1 indicate the background levels of the contaminants. The key to the plots is as follows:

x	Maximum concentration
■	Point where the maximum concentration and geometric mean coincide
•	Geometric mean
-	Connecting line for maximum values
…	Connecting line for geometric mean values

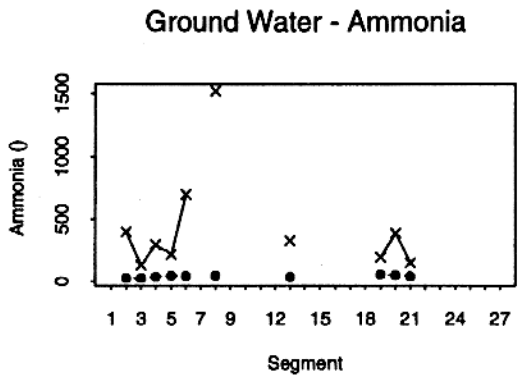
Final Data File

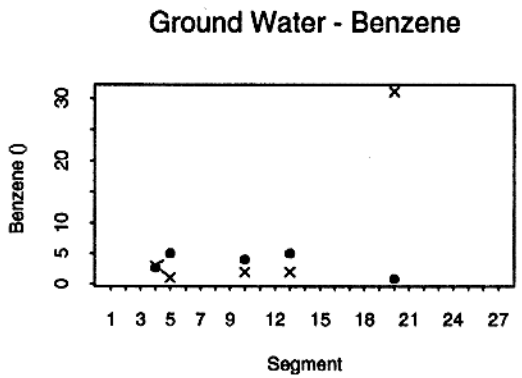
The file containing the selected data in the media files plus the substituted data is the "final data file." The final data file was the file used in the human health (along with the external radiation media file) and ecological screening risk assessments. Of the possible 3,024 data values, 1,153 have no data even after the substitution.

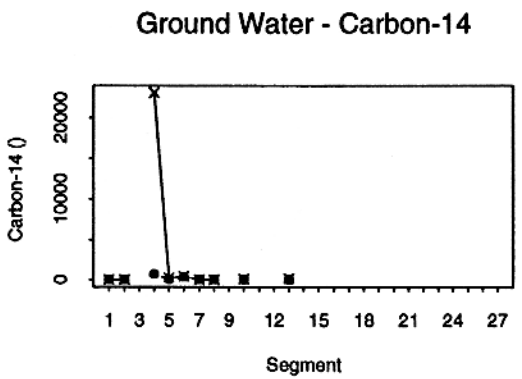
The final data file contains the original groundwater, seep, sediment, and surface water data. When no seep data were available, groundwater data were used as a surrogate. When no surface water data were available, values extrapolated for the same contaminant in the next upstream segment were used.

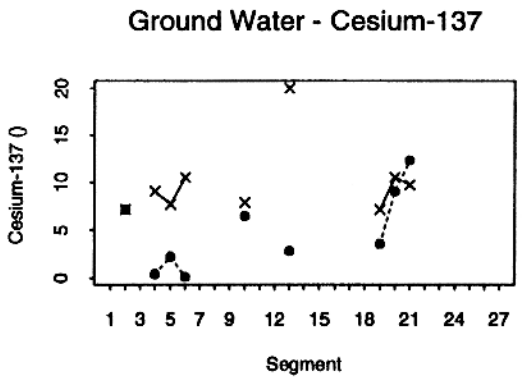
The final data file (fin-data.xls) is provided on diskette in this report as a comma separated file that can be opened and read by Microsoft Excel 5.0. The file contains the following information:

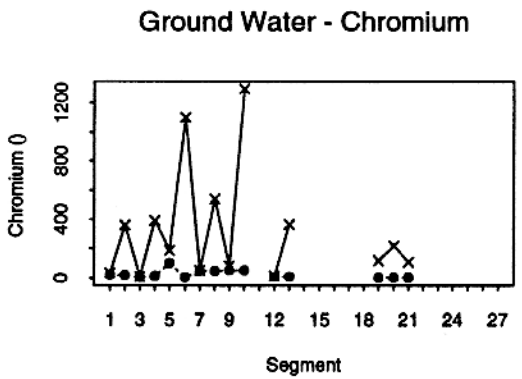
Segment	Segment number
Con_long_name	Contaminant name
gwmax (µCi/L or mg/L)	Maximum groundwater concentration
gwgm (log units)	Geometric mean of groundwater concentrations
gwgsd (log units)	Geometric standard deviation of groundwater concentrations
sdmax (µCi/kg or µmg/kg)	Maximum sediment concentration
sdgm (log units)	Geometric mean of sediment concentrations
sdgsd (log units)	Geometric standard deviation of groundwater concentrations
spmax (µCi/L or µg/L)	Maximum seep concentration
spgm (log units)	Geometric mean of seep concentrations
spgsd (log units)	Geometric standard deviation of seep concentrations
swmax (µCi/L or µmg/L)	Maximum surface water concentration
swgm (log units)	Geometric mean of surface water concentrations
swgsd (log units)	Geometric standard deviation of surface water concentrations
-9.99E+02	Missing/not sampled
#####	Widen column so number can appear

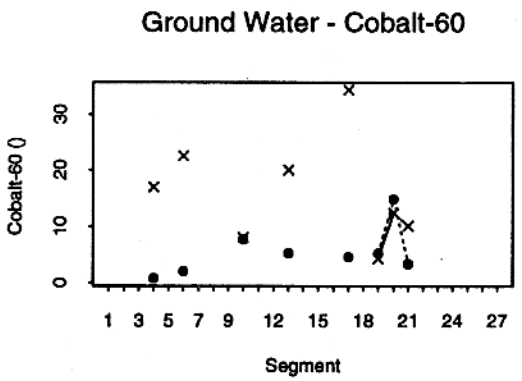

Ground Water - Ammonia
Ammonia ()
0
500
1000
1500
1 3 5 7 9 12 15 18 21 24 27
Segment

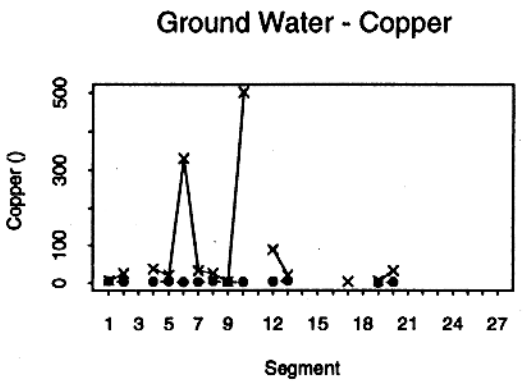

Ground Water - Benzene
Benzene ()
0 5 10 20 30
1 3 5 7 9 12 15 18 21 24 27
Segment

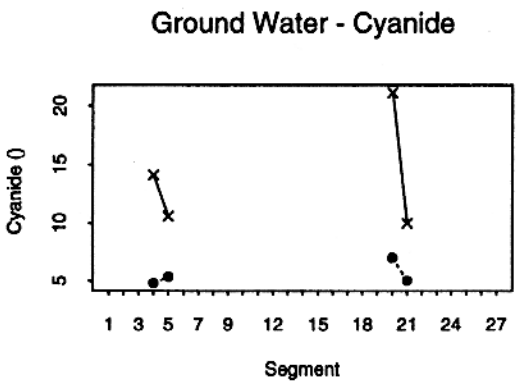

Ground Water - Carbon-14
Carbon-14 ()
0
10000
20000
1 3 5 7 9 12 15 18 21 24 27
Segment

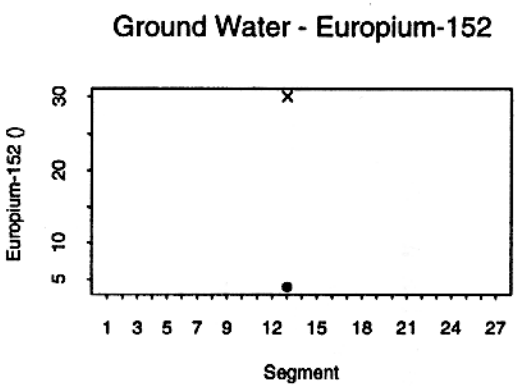

Ground Water - Cesium-137
Cesium-137 ()
0 5 10 15 20
1 3 5 7 9 12 15 18 21 24 27
Segment

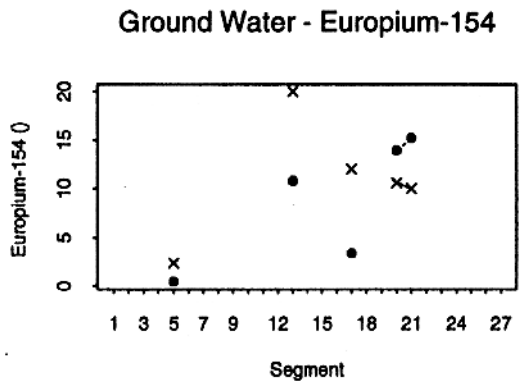

Ground Water - Chromium
Chromium ()
0
400
800
1200
1 3 5 7 9 12 15 18 21 24 27
Segment

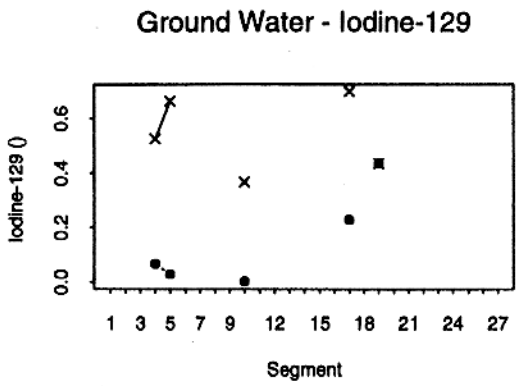

Ground Water - Cobalt-60
Cobalt-60 ()
0 10 20 30
1 3 5 7 9 12 15 18 21 24 27
Segment

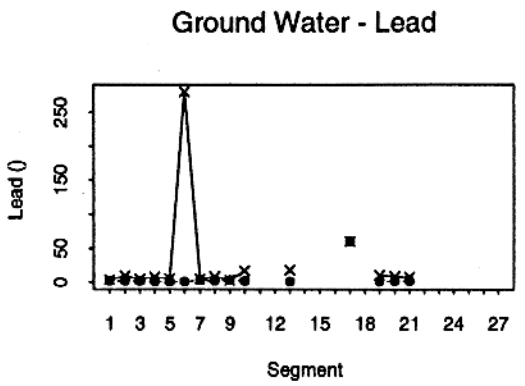

Ground Water - Copper
Copper ()
0
100
300
500
1 3 5 7 9 12 15 18 21 24 27
Segment

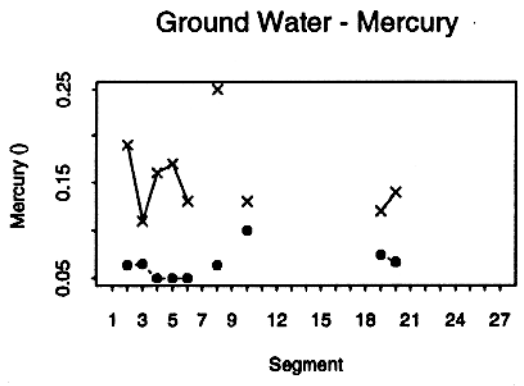

Ground Water - Cyanide
Cyanide ()
5 10 15 20
1 3 5 7 9 12 15 18 21 24 27
Segment

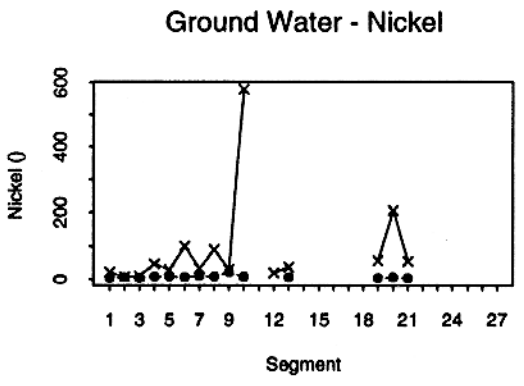

Ground Water - Europium-152
Europium-152 ()
5 10 20 30
1 3 5 7 9 12 15 18 21 24 27
Segment

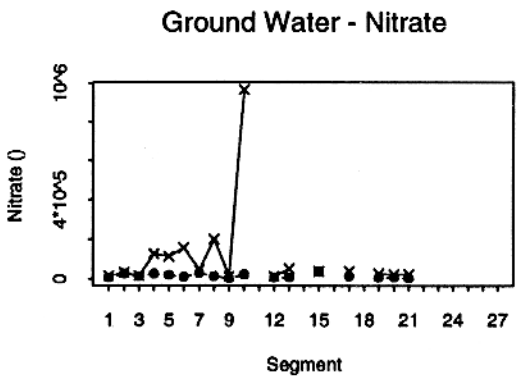

Ground Water - Europium-154
Europium-154 ()
0 5 10 15 20
1 3 5 7 9 12 15 18 21 24 27
Segment

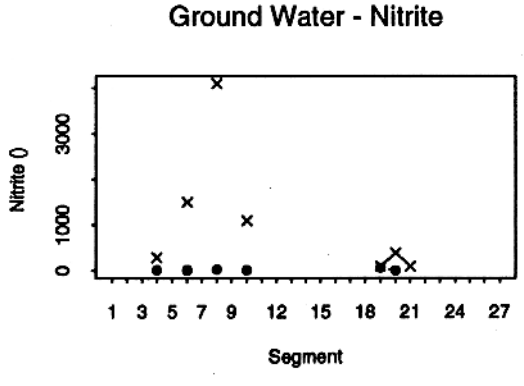

Ground Water - Iodine-129
Iodine-129 ()
0.0 0.2 0.4 0.6
1 3 5 7 9 12 15 18 21 24 27
Segment

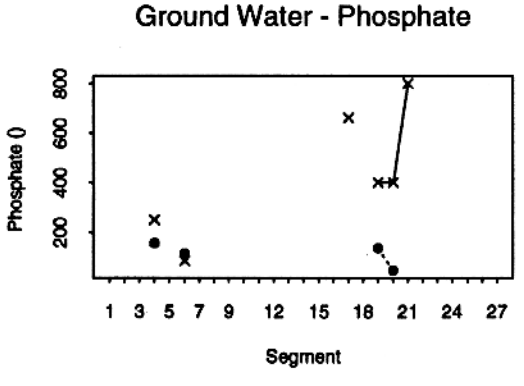

Ground Water - Lead
Lead ()
0 50 150 250
1 3 5 7 9 12 15 18 21 24 27
Segment

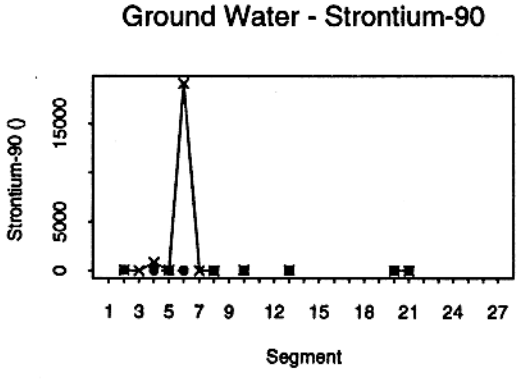

Ground Water - Mercury
Mercury ()
0.05 0.15 0.25
1 3 5 7 9 12 15 18 21 24 27
Segment


Ground Water - Nickel
Nickel ()
0 200 400 600
1 3 5 7 9 12 15 18 21 24 27
Segment

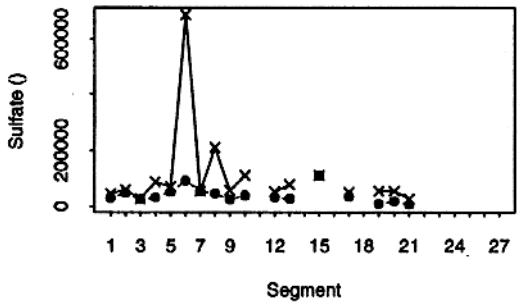

Ground Water - Nitrate
Nitrate ()
0 4*10^5 10^6
1 3 5 7 9 12 15 18 21 24 27
Segment


Ground Water - Nitrite
Nitrite ()
0 1000 3000
1 3 5 7 9 12 15 18 21 24 27
Segment

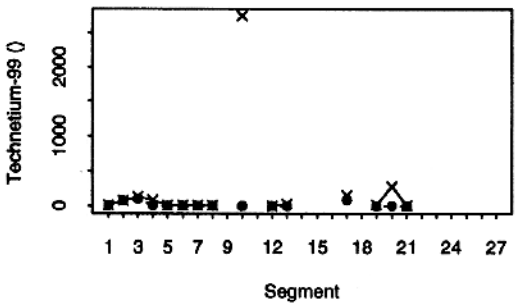

Ground Water - Phosphate
Phosphate ()
200 400 600 800
1 3 5 7 9 12 15 18 21 24 27
Segment


Ground Water - Strontium-90
Strontium-90 ()
0 5000 15000
1 3 5 7 9 12 15 18 21 24 27
Segment

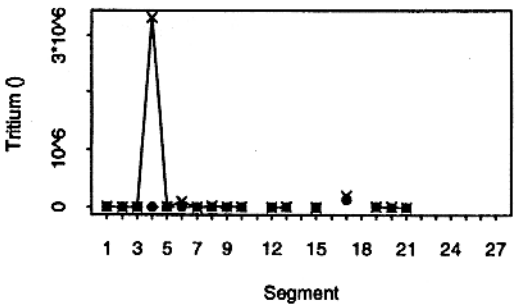
Ground Water - Sulfate



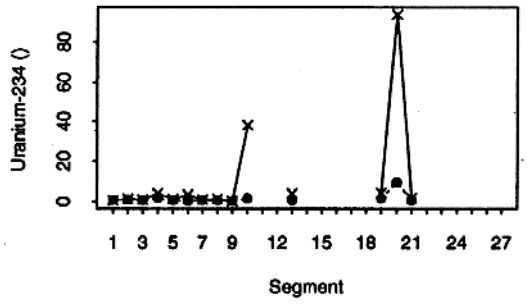
Ground Water - Technetium-99



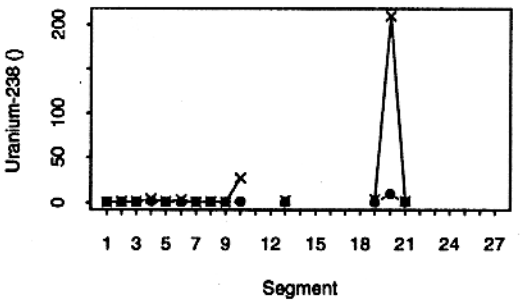
Ground Water - Tritium



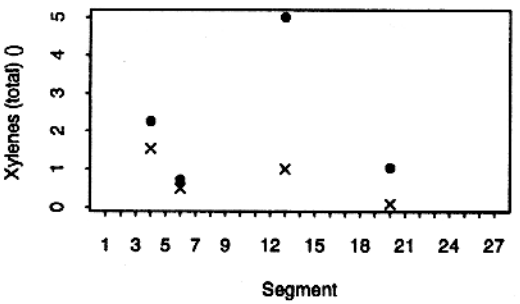
Ground Water - Uranium-234



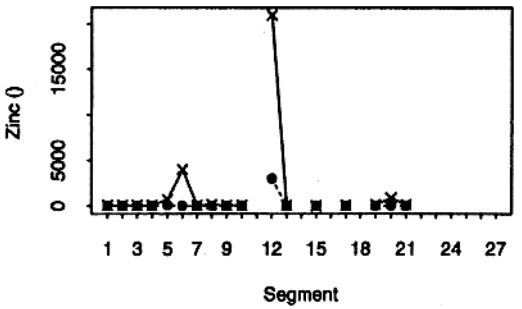
Ground Water - Uranium-238

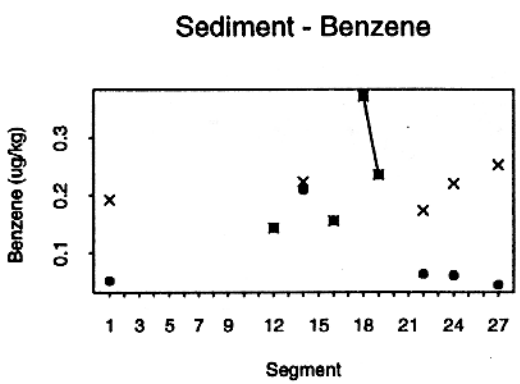


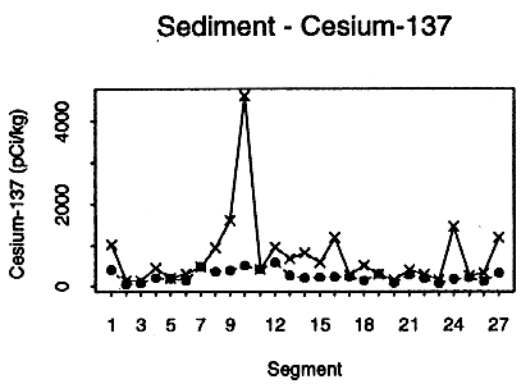
Ground Water - Xylenes (total)

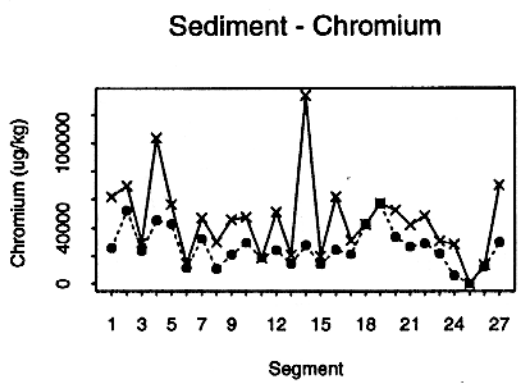


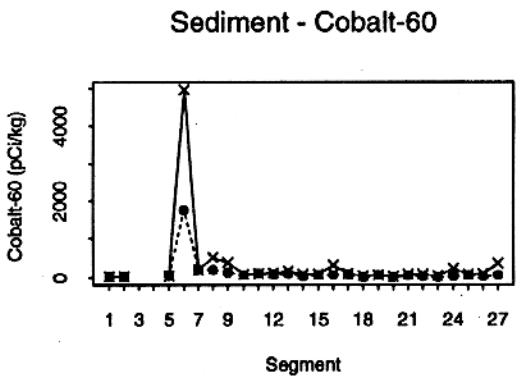
Ground Water - Zinc

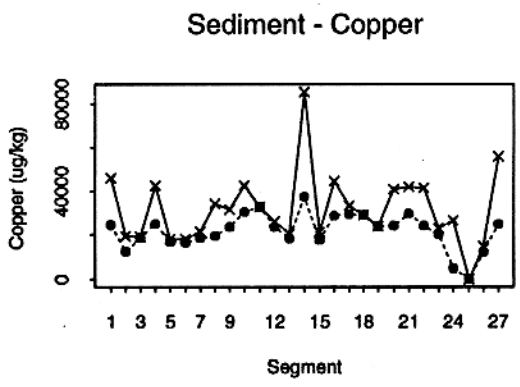


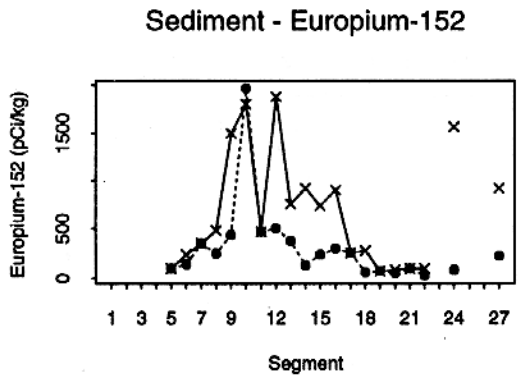

Sediment - Benzene
Benzene (ug/kg)
0.1
0.2
0.3
1 3 5 7 9 12 15 18 21 24 27
Segment

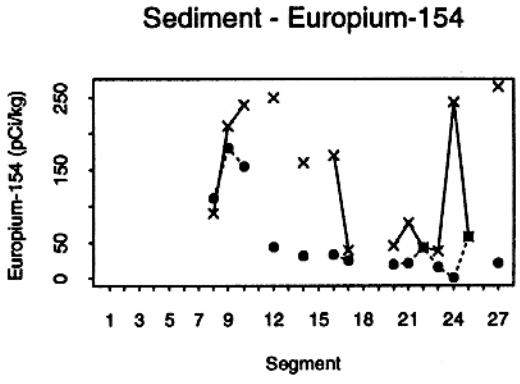

Sediment - Cesium-137
Cesium-137 (pCi/kg)
0
2000
4000
1 3 5 7 9 12 15 18 21 24 27
Segment

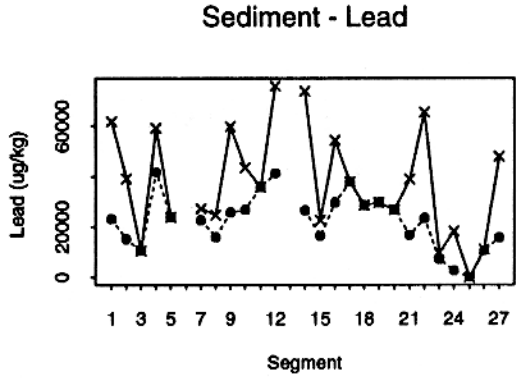

Sediment - Chromium
Chromium (ug/kg)
0
40000
100000
1 3 5 7 9 12 15 18 21 24 27
Segment

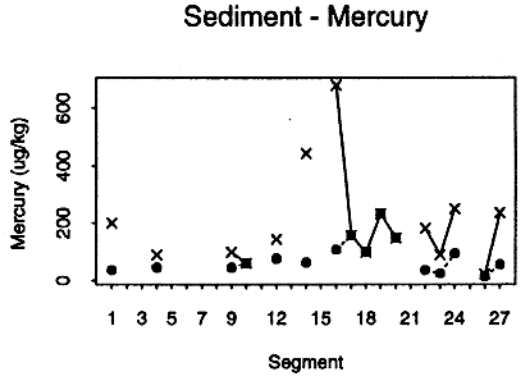

Sediment - Cobalt-60
Cobalt-60 (pCi/kg)
0
2000
4000
1 3 5 7 9 12 15 18 21 24 27
Segment


Sediment - Copper
Copper (ug/kg)
0
40000
80000
1 3 5 7 9 12 15 18 21 24 27
Segment

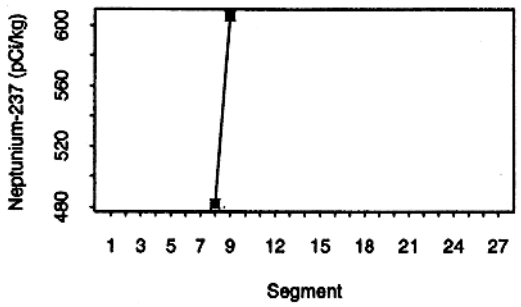

Sediment - Europium-152
Europium-152 (pCi/kg)
0
500
1500
1 3 5 7 9 12 15 18 21 24 27
Segment


Sediment - Europium-154
Europium-154 (pCi/kg)
0
50
150
250
1 3 5 7 9 12 15 18 21 24 27
Segment

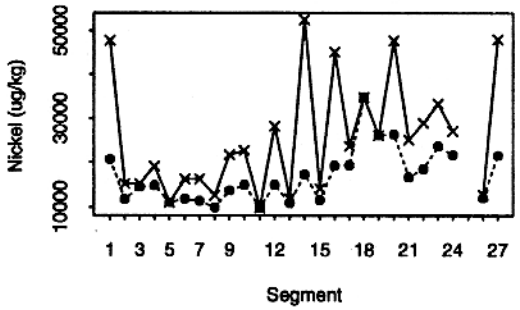

Sediment - Lead
Lead (ug/kg)
0
20000
60000
1 3 5 7 9 12 15 18 21 24 27
Segment


Sediment - Mercury
Mercury (ug/kg)
0
200
400
600
1 3 5 7 9 12 15 18 21 24 27
Segment

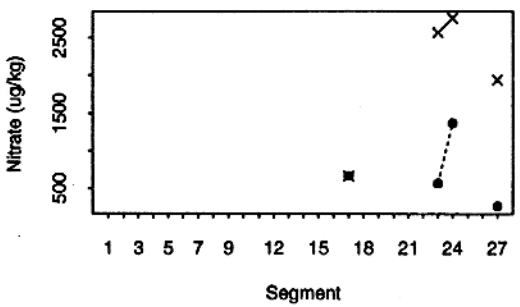
Sediment - Neptunium-237



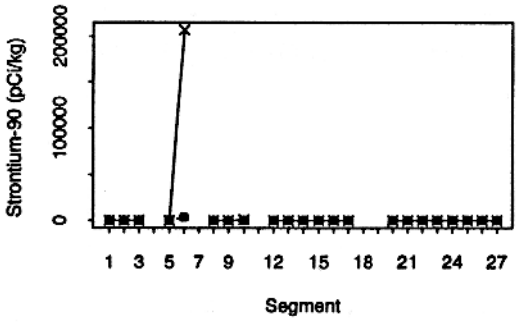
Sediment - Nickel



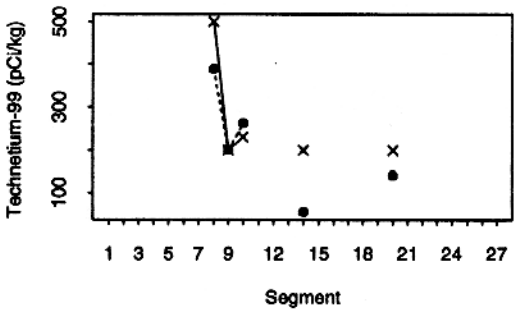
Sediment - Nitrate



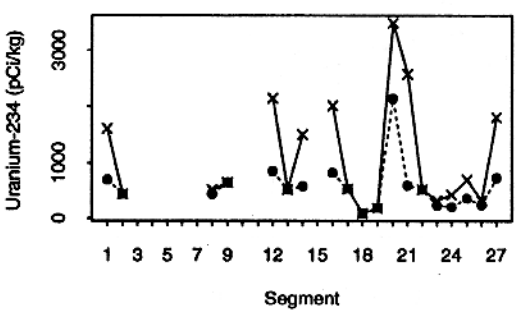
Sediment - Strontium-90



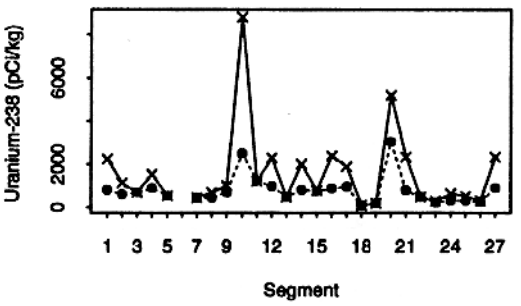
Sediment - Technetium-99



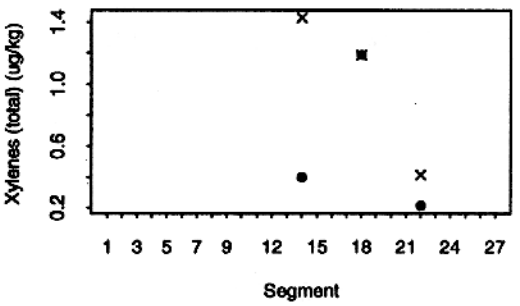
Sediment - Uranium-234



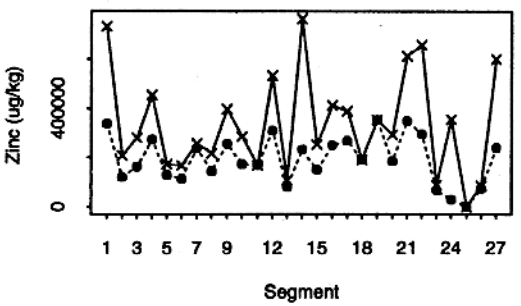
Sediment - Uranium-238



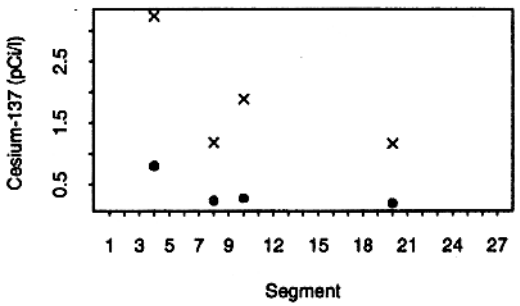
Sediment - Xylenes (total)



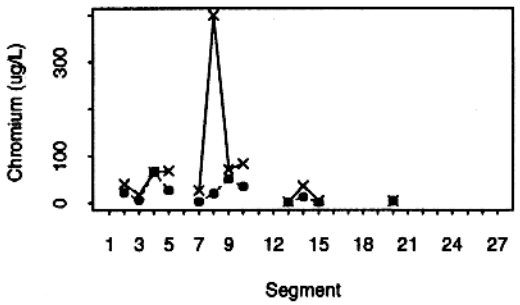
Sediment - Zinc



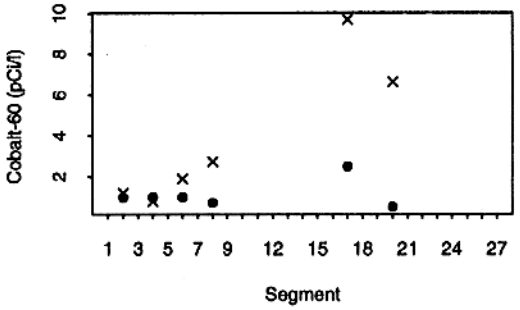
Seep - Cesium-137



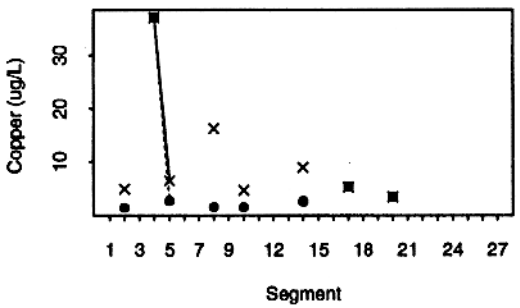
Seep - Chromium



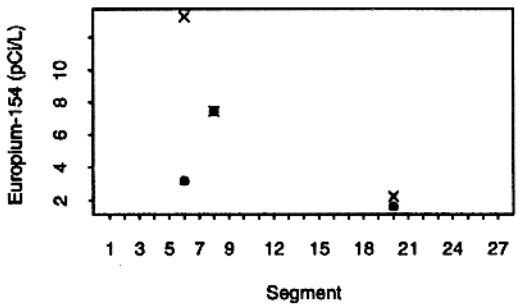
Seep - Cobalt-60



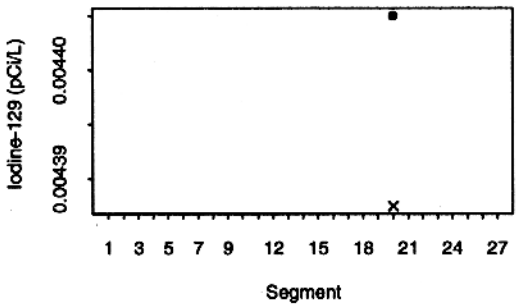
Seep - Copper



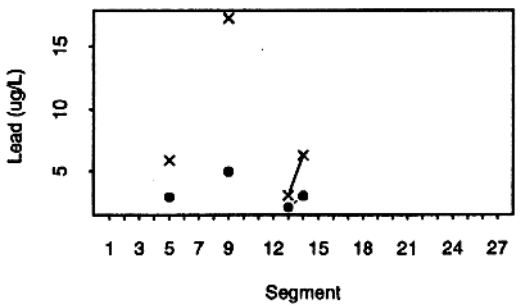
Seep - Europium-154



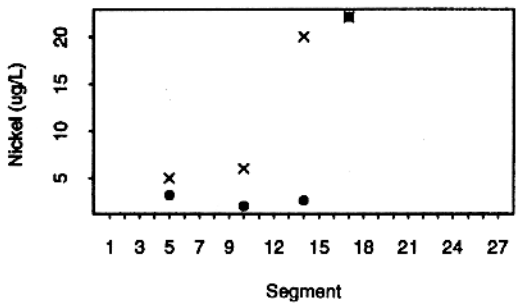
Seep - Iodine-129



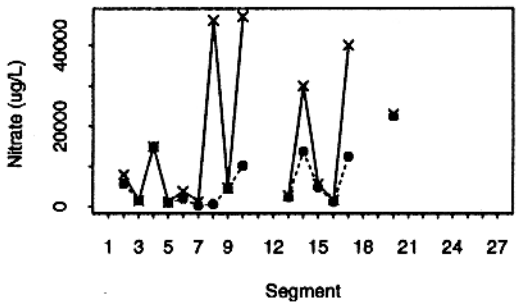
Seep - Lead



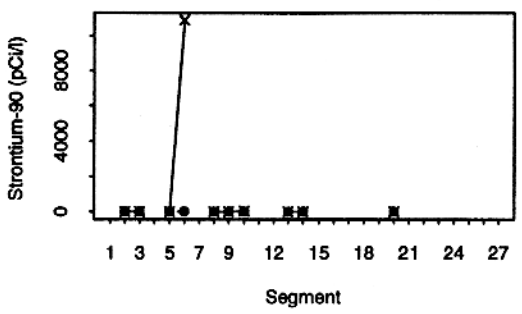
Seep - Nickel



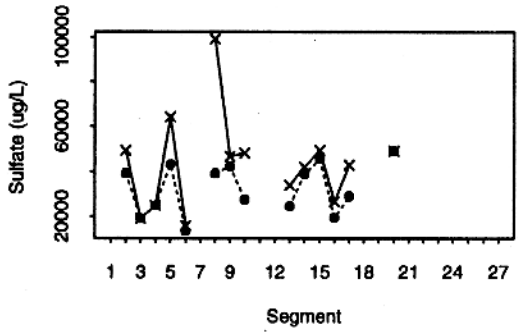
Seep - Nitrate



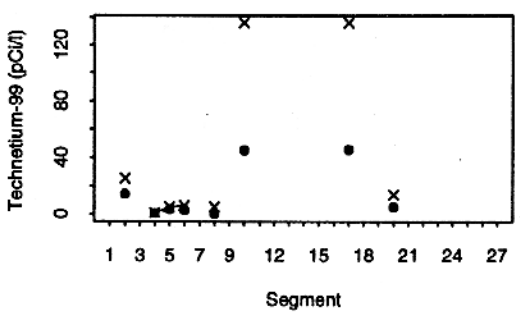
Seep - Strontium-90



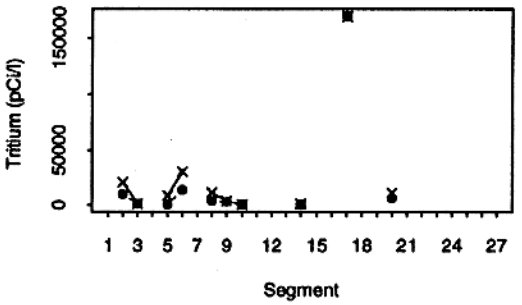
Seep - Sulfate



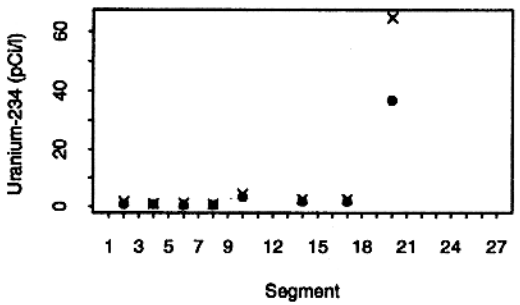
Seep - Technetium-99



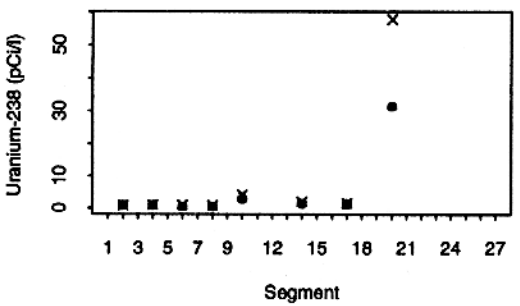
Seep - Tritium



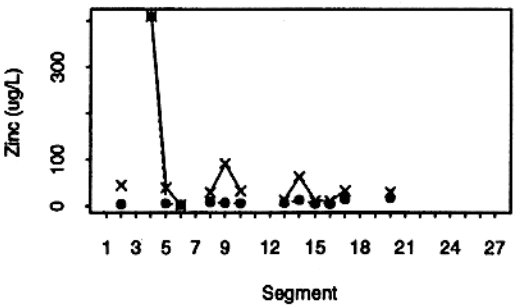
Seep - Uranium-234



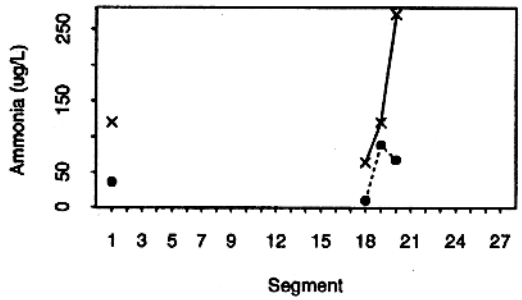
Seep - Uranium-238



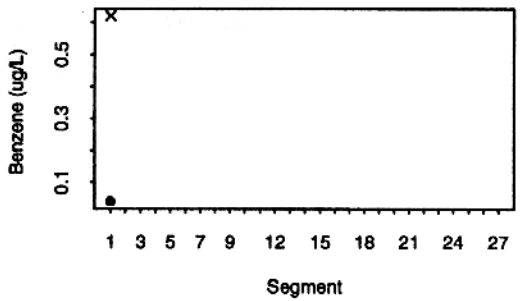
Seep - Zinc



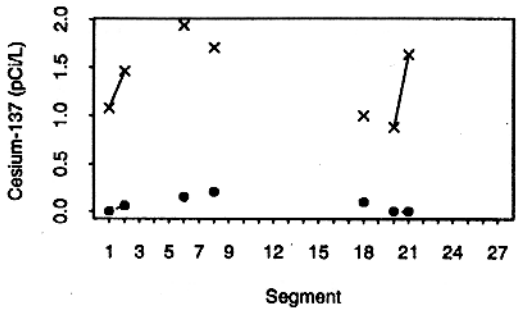
Surface Water - Ammonia



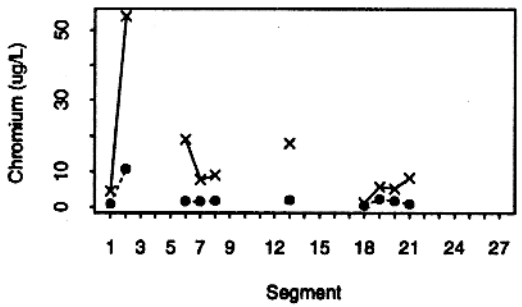
Surface Water - Benzene



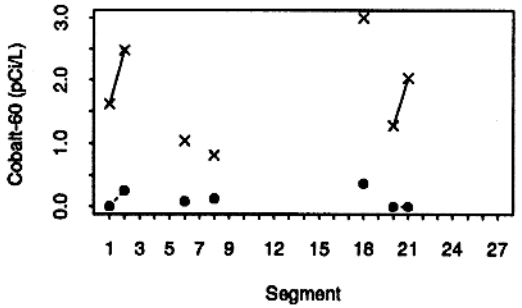
Surface Water - Cesium-137



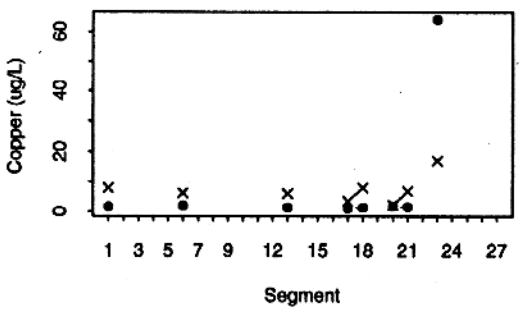
Surface Water - Chromium



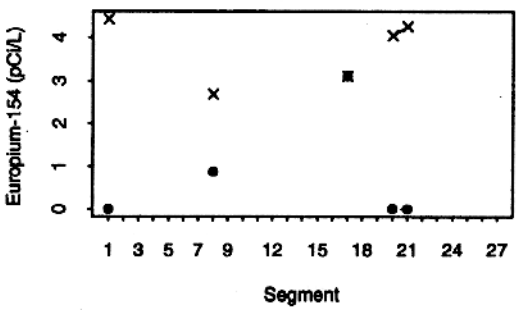
Surface Water - Cobalt-60



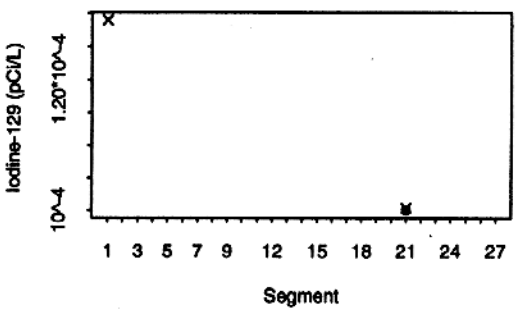
Surface Water - Copper



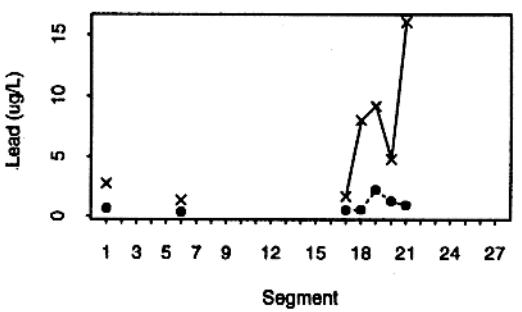
Surface Water - Europium-154



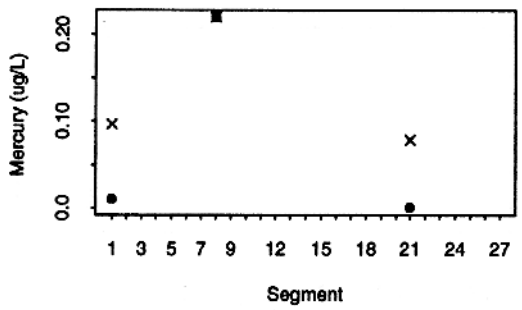
Surface Water - Iodine-129



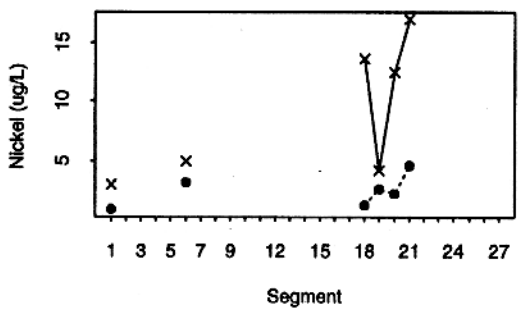
Surface Water - Lead



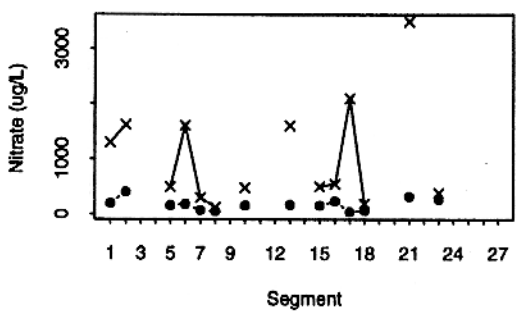
Surface Water - Mercury



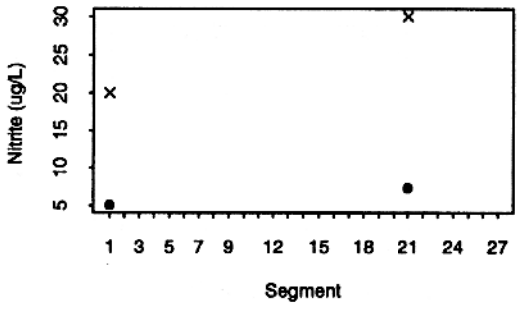
Surface Water - Nickel



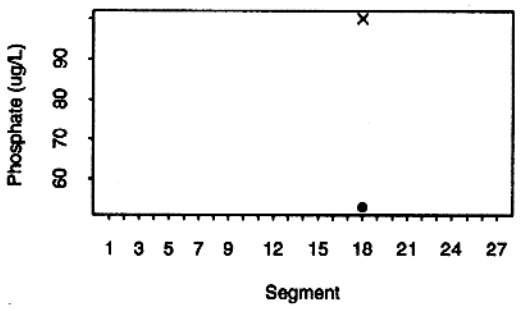
Surface Water - Nitrate



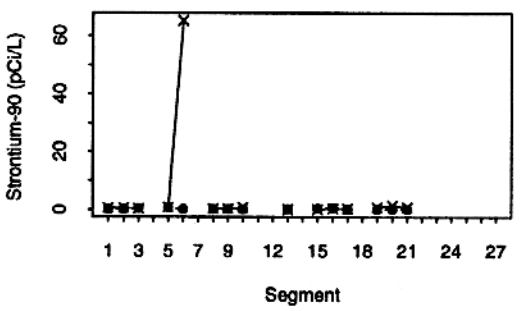
Surface Water - Nitrite



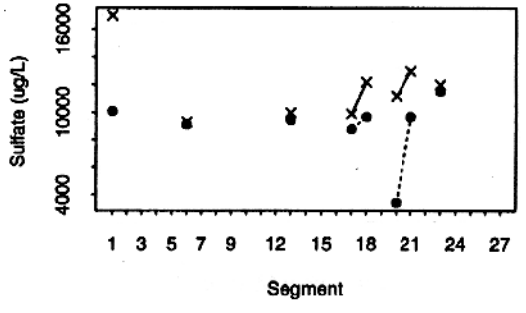
Surface Water - Phosphate



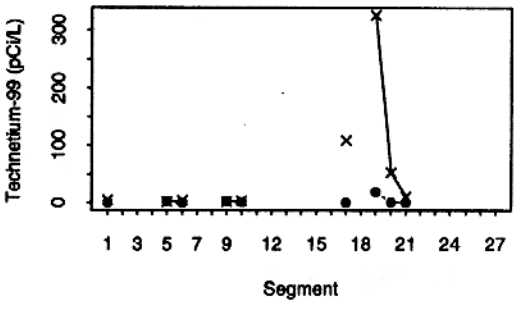
Surface Water - Strontium-90



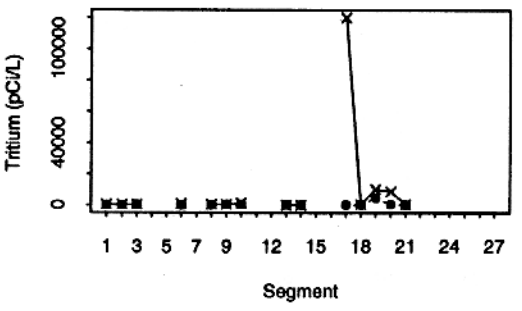
Surface Water - Sulfate

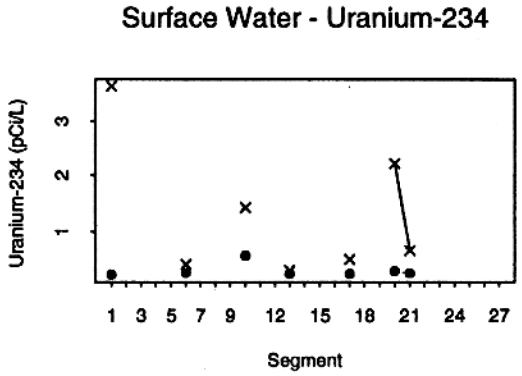


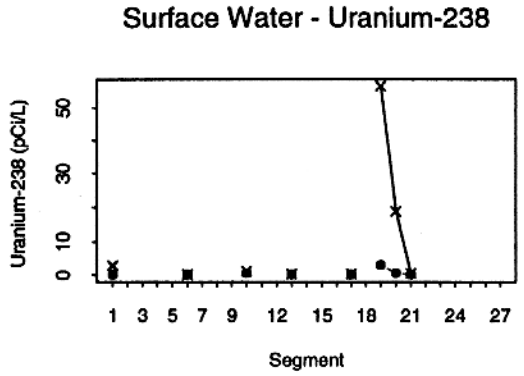
Surface Water - Technetium-99

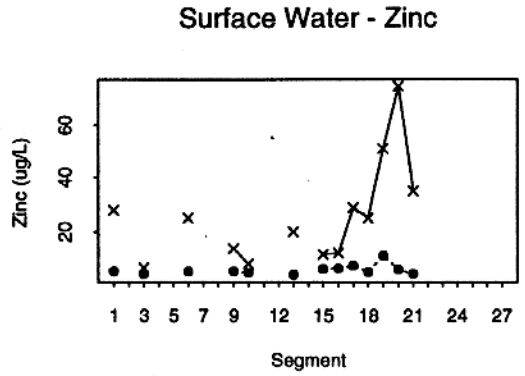


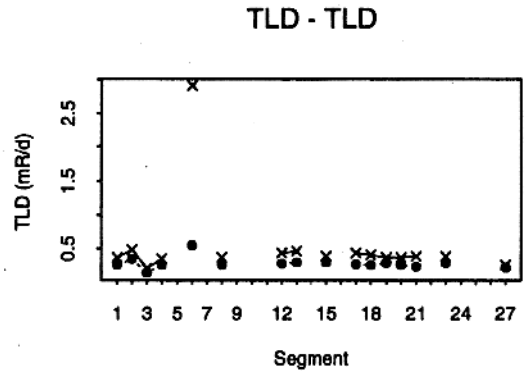
Surface Water - Tritium




Surface Water - Uranium-234
Uranium-234 (pCi/L)
1
2
3
1 3 5 7 9 12 15 18 21 24 27
Segment


Surface Water - Uranium-238
Uranium-238 (pCi/L)
0
10
30
50
1 3 5 7 9 12 15 18 21 24 27
Segment


Surface Water - Zinc
Zinc (ug/L)
20
40
60
1 3 5 7 9 12 15 18 21 24 27
Segment


TLD - TLD
TLD (mR/d)
0.5
1.5
2.5
1 3 5 7 9 12 15 18 21 24 27
Segment